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ABSTRACT

This report provides suggestions for effectively linking priority health information in 12 core subject areas without increasing teacher workload. It also illustrates how current academic standards in these core areas can be met by linking the health-learning opportunities with subject area standards. Four sections include: (1) "Introduction"; (2) "Using National Standards to Improve Teaching and Learning about Health" (learning about health as a discrete subject and learning about health through language arts, mathematics, science, foreign languages, civics and government, economics, fine arts, history and social studies, geography, physical education, and technology); (3) "Using National Standards to Guide Teacher Education About HIV Prevention" (HIV education in health education and in other curricular areas); and (4) "Helping Teacher Education Programs Support Teaching and Learning about Health" (recommendations, overcoming barriers to collaboration, and sharing responsibility). Four appendixes present: interprofessional collaboration at the University of Hawaii at Manoa; health promotion in teacher education at Kent State University, Ohio; integration for healthier schools: a partnership approach; and integrating comprehensive school health programs into preservice in higher education: results of a multidisciplinary initiative in Wisconsin. (Contains 51 references.) (SM)

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By Beth Pateman

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commissioned by the
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Build a Future Without AIDS

2003

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INTRODUCTION

Deans, policy makers, and educators in schools, colleges, and departments of education (SCDEs) across the U.S. grapple with a vast array of federal, state, and local mandates that affect teacher education programs. These programs are challenged to graduate teachers who can prepare students for responsible citizenship, lifelong learning, and productive employment in our nation's modern economy. Preservice teachers need to be ready to meet the national academic charge for all students to complete grades 4, 8, and 12 with demonstrated competency in numerous subject areas, including English, mathematics, science, foreign languages, civics and government, economics, the arts, history, and geography. Other legislation challenges educators to ensure that American students are first in the world in mathematics and science achievement. At the same time, educators are pressured to bridge the gap that has existed too often between what children with disabilities actually learn and what they are required to learn according to the regular curriculum (U.S. Department of Education, 1994, 1997).

To meet these important challenges, teacher education programs also must prepare educators to respond caringly and competently to the health-related needs that prekindergarten through Grade 12 (PK-12) children bring to school. Young people who suffer from physical illnesses or injury, mental health problems, hunger, pregnancy, alcohol or drug use, or fear of violence are less likely to learn in school, regardless of efforts to improve educational methods, standards, or organizations (Kolbe, Collins, & Cortese, 1997). Health-risk behaviors related to these problems interfere with students' learning and potential to develop rewarding and productive lives. Some of these health-risk behaviors for high school students are listed in Table 1.

Table 1. Priority Health-Risk Behaviors of U.S. High School Students, 2001

In 2001, Youth Risk Behavior Survey (YRBS) data indicated that among the nation's high school students in grades 9-12:

- 33.2% were in a physical fight within the past year
- 17.4% carried a weapon during the past month
- 8.8% attempted suicide during the past year
- 29.9% consumed five or more drinks on at least one occasion during the past month
- 42.4% ever used marijuana
- 45.6% ever engaged in sexual intercourse
- 14.2% ever were involved with four or more sexual partners and, among sexually active students, 42.1% did not use condoms during their last sexual intercourse
- 28.5% smoked cigarettes during the past month
- 78.6% did not eat 5 or more servings of fruits and vegetables during the past 7 days
- 29.2% thought they were overweight
- 46.0% were attempting weight loss
- 35.4% did not engage in vigorous physical activity during the past week

Source: Grunbaum, Kann, Kinchen, Williams, Ross, Lowry, & Kolbe, 2002.

Although schools' primary role is to educate, they also play an important role in the health of children. Health-risk behaviors, education outcomes, education behaviors, and students' attitudes about education are linked (Symons, Cinelli, James, & Groff, 1997; see Table 2). Realistically, however, teachers often feel that the demands made on them constantly increase while their existing responsibilities seldom are reduced or eliminated. How can teacher educators help teachers integrate their important role as health promoters and educators without increasing their sense of burden? How can essential health-related elements be incorporated into teacher education programs and PK-12 curricula that already are overcrowded? One crucial strategy is to link priority health-risk issues with recently developed national subject area standards for American education in health and other curricular areas.

Table 2. Assumptions About Linking the Worlds of School and Health

1. Education is the primary goal of schooling.

2. Education and health are linked. Educational outcomes are related to health status, and health outcomes are related to education.

3. Children and young people have certain basic needs, which include nurturing and support; timely and relevant health information, knowledge, and skills necessary to adopt healthful behavior; and access to health care.

4. Schools have the potential to be a crucial part of the system to provide basic health needs. Schools are where children and youth spend a significant amount of their time, and schools can reach entire families. However, schools are only part of the broader community system; the responsibility does not and should not fall only on the schools.

Source: Allensworth, Lawson, Nicholson, & Wyche, 1997.

The purpose of this paper is to provide concrete suggestions for effectively linking priority health information in 12 core subject areas *without* increasing teacher workload. A secondary purpose is to illustrate how current academic standards in these core areas also can be met by linking these health-learning opportunities with subject area standards. Because HIV is such a critical health problem, a special section of the paper is devoted to health education about HIV prevention and integrating information about HIV across the other core subject areas.

Before this subject area content material is presented, it is important to discuss why national standards in education are important, to describe the status of such standards on a state-by-state basis, and to show how health education standards have developed. This discussion provides an important context for teacher educators, especially those who may not be familiar with how health education has changed over time.

USING NATIONAL STANDARDS TO IMPROVE TEACHING AND LEARNING ABOUT HEALTH

According to Kendall and Marzano (1997), the principal reasons for developing educational standards are to clarify, raise, and provide a common set of expectations. Former Assistant Secretary of Education Diane Ravitch asserted that just as standards improve the daily lives of Americans in the construction of buildings and bridges, they also can improve the effectiveness of American education. "Standards can improve achievement by clearly defining what is to be taught and what kind of performance is expected" (Ravitch, 1995, p. 25).

Darling-Hammond (1997) affirmed the potential of standards to mobilize change and improve education. Challenging educational goals and contemporary knowledge about how people learn can be incorporated into practice when standards guide decisions about curriculum, teaching, and assessment. However, Darling-Hammond cautioned that standards for student learning are most useful when used as guideposts, not straitjackets, for building curriculum, assessments, and professional development opportunities and when used to focus and mobilize system resources rather than to penalize teachers, students, and schools.

The National Council of Teachers of Mathematics initiated national standards development with the publication of *Curriculum and Evaluation Standards for School Mathematics* in 1989. Since that time, national standards have been developed for English, mathematics, science, foreign languages, civics and government, economics, arts, history, geography, health education, physical education, special education, behavioral studies, technology, and other areas identified as important by the Secretary's Commission on Achieving Necessary Skills (Kendall & Marzano, 1997). Table 3 delineates the U.S. states and territories that either are ready to implement or are developing content standards.

Table 3. Status of State Content Standards in Academic Subjects, 2000

State	Content Standards Ready	Contents Standards Under Revision
Alabama	M, E/LA, SSt, AR, FL, HE, PE, Computer App.	S
Alaska	M, S, E/LA, H, AR, FL, HE, Geog, Govt	
Arizona (1994)	M, S, LA, SSt	AR, FL, HE
Arkansas	H/SSt, AR, FL, HE/PE, M, S, LA (1999)	M, E/LA (review)
California	M, S, E/LA, SSt	AR, FL, HE, PE
Colorado	M, S, H, LA, Geog, AR, FL, PE	
Connecticut	M, S, E/LA, SSt, AR, FL, HE, PE	
Delaware	M, S, E/LA, SSt, AR, FL	HE, PE
DoDEA	M, S, E/LA, SSt, AR, FL, HE, PE	
Florida	M, S, LA, SSt, AR, FL, HE/PE	
Georgia	M, S, E/LA, SSt (1999)	M, S, LA, SSt
Hawaii	M, S, E/LA, SSt, AR, FL, HE, PE	
Idaho	M, S, LA, SSt, HE (K-12)	Humanities (9-12)
Illinois (1998)	M, S, E/LA, SSt, AR, FL, HE, PE	
Indiana	M, E/LA, SSt (1999)	M, S, E/LA, SSt, AR, FL, PE

Table 3. Status of State Content Standards in Academic Subjects, 2000 (continued)

Iowa		
Kansas	M, S, LA, SSt, AR, HE, PE	
Kentucky	M, S, SSt, AR, Prac Living (inc. HE/PE), Voc Stud, Writ, Read	
Louisiana	M, E/LA; S, SSt (1999)	S, SSt
Maine	M, S, E/LA, SSt, AR, FL, HE, PE	
Maryland	M, S, E/LA, SSt, AR, FL, HE, PE	
Massachusetts	H/SSt, AR, FL, HE, PE; M, S, E (1999)	M, S, E
Michigan	M, S, E/LA, SSt, AR, FL, HE, PE	
Minnesota	M, S, LA, SSt, AR, FL, HE, PE	
Mississippi	M, S, LA, SSt, AR, HE/PE	
Missouri	M, S, LA, SSt, AR, HE, PE	
Montana	M, S, E/LA, SSt, AR, FL, HE, PE	
Nebraska	M, S, SSt, Reading/Writ (1999)	M, S, E/LA, SSt
Nevada	M, S, E/LA, SSt, AR, FL, HE, PE, comp Sci & Tech	M, S, E/LA, SSt, AR, HE, PE, Lit
New Hampshire	M, S, E/LA, SSt	AR
New Jersey	M, S,LA, SSt	AR, HE, PE
New Mexico	M, S, LA, SSt, AR, FL, HE, PE	
New York (1996)	M/S, E/LA, SSt, HE/PE	
North Carolina	M, S, E/LA, FL, HE, PE, Voc & Tech Ed	SSt, AR (rev)
North Dakota	M, S, E/LA, AR, HE, PE	SSt, FL
Ohio	M, S,LA, SSt, AR, FL	HE, PE
Oklahoma	M, S, SSt, AR, FL, HE, PE	
Oregon	M, S, E, H, AR, FL, Civ, Geog, Econ	PE
Pennsylvania	M, E/LA	S, H/SSt, AR, FL, HE, PE
Rhode Island	M, S, E/LA, AR, HE	
South Carolina	M, S, E/LA, SSt, AR, HE, FL, PE	
South Dakota	M, S, E/LA, SSt, AR, FL, HE, PE	
Tennessee	M, S, E, SSt, AR, FL, HE, PE	
Texas	M, S, E/LA, SSt, AR, FL, HE, PE	
Utah	M, S, E, SSt, AR, FL, HE, PE	
Vermont	M/ S, LA, AR, H/SSt	
Virginia	M, S, E, H/ SSt, AR, FL	HE, PE
Washington	M, S, LA, SSt, AR, HE	
West Virginia	M, S, SSt, AR, FL, HE, PE	E/LA (rev)
Wisconsin	M, S, E/LA, SSt, AR, FL, HE, PE	
Wyoming	M, S, E/LA, SSt, FL, HE, PE	AR, Career/Voc E

M = Mathematics; E = English; LA = Language Arts; SSt = Social Studies; AR = Arts, Visual & Performing, Fine Arts; FL = Foreign Language; HE = Health Education; PE = Physical Education; S = Science; H = History; Geog = Geography; Govt = Government; Civ = Civics; Voc & Tech Ed = Vocational and Technical Education. DoDEA = Dept. of Defense Education Activity.

Source: Council of Chief State School Officers (CCSSO)2000. Copyright 2000 by CCSSO. Table reprinted with permission.

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Table 4. State Policy Linking Professional Development With Content Standards, 2000

The following statements were made in response to the question, "Does your state have a policy that links or aligns teacher professional development programs with state content standards?"

Alaska	The commissioner approves the number of district inservice days (up to 10) they intend to use during the school year. Districts are required to show the link between the inservice topics and the Alaska teacher standards. Those data will be used to develop technical assistance plans for schools designated as low-performing.
Florida	Statewide training programs in Classroom Managed Assessment and Connections: A Curriculum System for School Restructuring are being revised and updated to reflect changes in statewide curriculum assessment initiatives.
Idaho	Professional development required for elementary teachers and administrators in reading instruction; all teachers and administrators in basic technology competency; elementary reading standards and technology standards for K-12 teachers.
Illinois (1998)	Schools required state to redesign the teacher certification system by 1/1/99. Changes in teacher preparatory programs will be aligned with the Illinois Learning Standards.
Indiana	Schools required to develop and implement professional development programs tied to student needs and aligned with standards and state tests. First year 2002-03.
Kansas	State inservice fund allowed to pay for noncontractual staff development.
Kentucky	Revised state statute established statewide professional development program for certified personnel (1999-2000).
Nebraska	No formal policy; federal Goals 2000 & Eisenhower program funds are targeted for professional development on content standards.
Nevada	The 1999 Nevada State Legislature appropriated funds and mandated the development of four regional Professional Development Programs. The primary purpose of the PDPs is to provide teachers and administrators development opportunities designed to meet the challenge of implementing standards.
New Mexico	Funding via 1999 legislature developed frameworks for professional development.
Ohio	Individual professional development plan for certification renewal or upgrade are sent to Local Professional Development Committee, which reviews and approves the plan.
Oklahoma	Reading Sufficiency Act funds professional development in elementary reading. Professional development is aligned with the state-mandated curriculum: Priority Academic Student Skills (PASS).
Pennsylvania	Act 48 requires increased professional development of professional staff over 5-year period to maintain active certification.
South Carolina	Education Accountability Act funds are provided to support professional development on curriculum standards implementation. All professional development on curriculum and instruction is aligned with the curriculum standards.
South Dakota	Local course guidelines must be implemented that are aligned with state standards in four areas: math, language arts, social studies, and science. State provides 8 days of staff development to teams from a district to assist them in this endeavor.
Tennessee	Policies related to school improvement and end-of-course testing require alignment of content standards and professional development.
Texas	State promotes the alignment of professional development programs for teachers with state K-12 content standards through Centers for Educator Development. These centers, for every curriculum area, have been established to provide educators with a thorough knowledge of state's content standards, increase educators' access to high-quality teaching models, and establish coordinated system of educator development to improve student learning and achievement. Various training initiatives like kindergarten and first grade training academies are funded.
Vermont	State has developed a statewide professional development system with five regional Teacher Quality Network sites to support local staff development.
Virginia	Language in the appropriations act being considered by the General Assembly would provide 100% state funding for professional development aligned with the K-12 content standards.
West Virginia	Current law requires that 12 of the 18 required hours in professional development be directly related to the professional's job placement. For teachers, this would be content specific.
Wisconsin	Redesign of teacher licensing requirements.
DoDEA, Louisiana, Montana, Oregon	Developing a policy.

DoDEA = Department of Defense Education Activity.

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As Table 4 illustrates, 25 states and territories either have or are developing a policy that links teachers' professional development with state content standards. For example, New York authorities have been deliberating about a linkage between teacher education and licensing requirements to ensure that new teachers' practice is consistent with the state's learning goals (Darling-Hammond, 1997). Attention to national and state standards can provide important guidance for teacher education programs to focus on health issues across multiple subject areas.

Depending on the school system, PK-12 health education is taught as a separate subject and/or incorporated into other subject areas. The following discussion provides a range of possibilities for blending national education standards, major subject areas, and priority health-risk issues. This discussion begins with considering national standards as a basis for preparing educators to teach about health as a separate subject. Following this, national standards for 11 subject areas are described along with a discussion of how teachers can incorporate priority health-risk information while meeting national standards.

Learning About Health as a Discrete Subject

Traditional health education initially was organized around health content or topic areas. In contrast, the *National Health Education Standards* (Joint Committee on National Health Education Standards, 1995), presented in Table 5, provide a balanced focus on knowledge and skills—a focus on what students should know and be able to do to promote and protect their own health and safety and that of others.

Table 5. National Health Education Standards

1. Students will comprehend concepts related to health promotion and disease prevention.
2. Students will demonstrate the ability to access valid health information and health-promoting products and services.
3. Students will demonstrate the ability to practice health-enhancing behaviors and reduce health risks.
4. Students will analyze the influence of culture, media, technology, and other factors on health.
5. Students will demonstrate the ability to use interpersonal communication skills to enhance health.
6. Students will demonstrate the ability to use goal-setting and decision-making skills to enhance health.
7. Students will demonstrate the ability to advocate for personal, family, and community health.

Source: Joint Committee on National Health Education Standards, 1995.

The Council of Chief State School Officers (CCSSO, 1998b) works with states to develop systematic, efficient methods of collecting, analyzing, and reporting data on curriculum and instructional practices. CCSSO assists educators and policy makers with data collection for analyzing student performance on assessments, measuring classroom curriculum changes in relation to state or local content standards, and evaluating program effectiveness. The CCSSO State Collaborative on Assessment and Student Standards (SCASS) projects in various curricular areas provide a means for assessing the degree to which classroom curricula are moving toward standards.

CCSSO began the SCASS Health Education Assessment Project in 1993. The mission of the project was to develop materials and resources that foster meaningful assessment of students' knowledge and skills within a comprehensive school health education curriculum. In 1998, CCSSO completed a new assessment framework, designed to provide guidance for item development (CCSSO, 1998a). The National Health Education Standards provided the initial structure for the framework. The framework connected the National Health Education Standards with nine content assessment areas that integrate the priority health-risk behaviors identified by the Centers for Disease Control and Prevention (CDC) (e.g., unintentional and intentional injury, alcohol and other drug use, sexual behaviors, tobacco use, dietary behaviors, and physical activity) and traditional health education content areas (Society of State Directors of Health, Physical Education, and Recreation, 1998). This linkage is depicted in Table 6. The assessment framework captures the importance of specific concepts and skills for assessment purposes, organizing items at the elementary, middle, and high school levels.

Table 6. CCSSO-SCASS Health Education Assessment Framework

Concepts and skills: National Health Education Standards	• Core concepts • Accessing information, products, and services • Self-management • Internal and external influences • Interpersonal communication • Decision making and goal setting • Advocacy
Content areas	• Injury and violence prevention • Alcohol and other drugs • Sexual health • Tobacco • Nutrition • Physical activity • Mental and emotional health • Personal and consumer health • Community and environmental health
Grade levels	• Elementary school • Middle school • High school

'CCSSO-SCASS is the Council of Chief State School Officers State Collaborative on Assessment and Student Standards.
Source: Adapted from. Council of Chief state School Officers, 1998a.

Students in a contemporary health education class based on the National Health Education Standards might find themselves involved in activities such as accessing accurate health information from the Internet about HIV infection, refuting the dubious claims of quick weight-loss advertisements, and creating personal strategies to promote regular physical activity for themselves and family members. Students might be taught to deconstruct messages they find frequently in advertisements, television programs, and movies that glamorize sexuality, tobacco, alcohol and other drugs, and violence. Students might practice and demonstrate their ability to refuse enticements to participate in unwanted behaviors, such as cheating on homework or shoplifting, or to set personal goals and make decisions that support the attainment of those goals while managing setbacks. Students also might prepare and make presentations to local school boards or community councils that advocate for public health policies, such as no-smoking ordinances in local restaurants.

Given the opportunity, most students quickly enter into intense discussions about their perspectives on why people make health-related choices that seem difficult to understand. Well-prepared, skillful teachers who provide safe environments and learning opportunities that encourage critical thinking and reasoning are key to this type of engagement. Teacher education programs should provide opportunities for educators to learn about the National Health Education Standards, to experience and develop active learning strategies for health promotion and education, and to incorporate learning about health as an important means of connecting with students' lives and interests. Table 7 provides recommendations for school health education developed by the Institute of Medicine.

Table 7. Institute of Medicine Recommendations for School-Based Health Education

1. All students should receive sequential, age-appropriate health education every year during the elementary and middle or junior high grades.

2. A one-semester health education course at the secondary level should immediately become a minimum requirement for high school graduation. Instruction should follow the National Health Education Standards, use effective up-to-date curricula, be provided by qualified health education teachers interested in teaching the subject, and emphasize the six priority behavioral areas identified by the Centers for Disease Control and Prevention.

3. All elementary teachers should receive substantive preparation in health education content and methodology during their preservice college training. This preparation should give elementary generalist teachers strategies for infusing health instruction into the curriculum and prepare upper elementary teachers to lay the groundwork for the intensive middle or junior high health education program.

Source: Allensworth, Lawson, Nicholson, & Wyche, 1997.

Learning About Health Through Language Arts

In 1996, the National Council of Teachers of English and the International Reading Association completed *Standards for the English Language Arts* (1996). The 12 standards are related to language skills for reading, writing, listening, speaking, viewing, and visually representing. The ultimate purpose of the standards is to ensure that all students are offered the opportunities, encouragement, and vision to develop the language skills they need to pursue their life goals (National Council of Teachers of English & International Reading Association, 1996).

Health education and literature may be linked to these standards in several ways (see Table 8). Literature can be used to communicate strongly held feelings and ideas about priority health issues. Telljohann, Symons, and Miller (2001) identify examples of children's literature that can be used to communicate about self-esteem; personal health; safety; alcohol and other drug use prevention; nutrition; environmental health; death, dying, and aging; HIV and AIDS; and human sexuality. Older students also benefit from reading contemporary literature related to powerful family, social, and ethical health-related issues. For example, students who read diving champion Greg Louganis' autobiography, *Breaking the Surface* (1996), might explore ideas about discrimination, adoption, goal-setting, depression, accepting sexual orientation, and living with HIV. Similarly, students who read Magic Johnson's book, *What You Can Do to Avoid AIDS* (1992), might debate whether the book should be banned from classrooms because of its graphic content ("Suburb Bans," 1996).

Table 8. Linking Language Arts With Health Education

Learn opportunity	Language arts standard	Health standard
• Read a range of age-appropriate literature to initiate discussions about mental, emotional, social, and physical health concepts and how they influence people's health behaviors.	• Reading	• Core concepts • Analysis of influences
• Write about personal decision-making and goal-setting processes in the practice of health-enhancing behaviors in particular health contexts.	• Writing	• Decision making • Goal setting • Self-management
• Practice listening and reflection skills toenhance interpersonal communication about health-related issues.	• Listening	• Interpersonal communication
• Research, design, videotape, and broadcast health-related public service announcements to advocate for strongly held positions.	• Speaking	• Core concepts • Advocacy
• View a range of media to identify marketing strategies and to analyze influences on health-risk behaviors.	• Viewing	• Analysis of influences
• Research and visually represent information about various health-related products and services to advocate for health.	• Visually representing	• Accessing information • Advocacy

Students' own oral and written languages provide important avenues for self-expression, social interaction, creativity, and debate about crucial life issues. Teachers in many subject areas use student journal writing as a regular part of their classes, giving students opportunities to share concerns, questions, and ideas with caring adults and class members. Original dramatic presentations afford outlets for expressing fears, beliefs, and possible solutions to health concerns in students' lives. Role playing, for example, allows students to rehearse assertive responses to unwanted pressures from peers. In addition, oral reports about students' investigations provide insights into their thinking experiences. Middle-level students in one school, for example, reported an interesting finding from

their survey of peers', teachers', and parents' knowledge of sexually transmitted diseases. The young researchers revealed, "Our parents don't even know STDs—they call it, like, vinyl disease!"

Teacher education programs similarly can create myriad opportunities for educators to explore health-related issues in language arts preparation. Literature across the ages has dealt with issues of life, death, disease, famine, poverty, customs, behavior, and societal response to those issues in given historical periods (Allensworth, Lawson, Nicholson, & Wyche, 1997). Educators who are cognizant of today's health priorities will find constant references to these issues in oral and written media of all kinds.

Learning About Health Through Mathematics

The Curriculum and Evaluation Standards for School Mathematics (National Council of Teachers of Mathematics [NCTM], 1989) were devised to guide the revision of the school mathematics curriculum and to articulate a coherent vision of what it means to be mathematically literate in today's world. The five general goals developed for all students included (a) learning to value mathematics, (b) becoming confident in their ability to do mathematics, (c) becoming mathematical problem solvers, (d) learning to communicate mathematically, and (e) learning to reason mathematically. NCTM asserted that knowing mathematics is doing mathematics. A person gathers, discovers, or creates knowledge in the course of participating in activities that have a purpose. This active process is different from merely mastering concepts and procedures.

NCTM's newest standards document, *Principles and Standards for School Mathematics* (2000), has been widely distributed. These PK-12 standards address number and operations, algebra, geometry, measurement, data analysis and probability, problem solving, reasoning and proof, communications, connections, and representation.

With regard to health, mathematics, particularly in statistical analysis and epidemiology, has been indispensable to the progress against morbidity and early death (Allensworth et al., 1997). From the early elementary grades through high school, students might identify questions about contemporary health topics, estimate answers to their questions, and design procedures to gather and collect information, analyze data, and communicate their findings. Teachers of mathematics might engage students in designing health-related projects that range from simple to sophisticated. Making connections with the world of health offers many opportunities for students to become real-world mathematical problem solvers. Some health questions related to mathematics include the following:

- How can we calculate the percentage of calories from fat in various food products, using nutrition labels as data sources?
- Can we estimate the probability of unintended pregnancy resulting from unprotected intercourse?
- How can we determine the statistical relationships among speed, stopping distance, and force of impact of motor vehicles?
- What ratio will we find between the dollars spent on tobacco-industry advertising and medical costs involved in treating smoking-related illnesses each year?
- How can we graphically represent results from our survey of teachers, parents, and other students about their exercise patterns?

Teacher education programs have an important capacity to illustrate mathematical problem solving about health issues. Educators can take advantage of many national data sources through Internet connections to federal agencies, such as the Centers for Disease Control and Prevention (www.cdc.gov), the National Center for Health Statistics (www.cdc.gov/nchs/), the National Institutes of Health (www.nih.gov), and the U.S. Department of Agriculture (www.usda.gov). Teacher educators in mathematics can reinforce NCTM's call for learning mathematics through a course of activities that have real-life purpose. Table 9 provides examples of other ways health and mathematics can be linked.

Table 9. Linking Mathematics and Health Education

Learning opportunity	Mathematics standard	Health standard
• Measure and record personal changes in physical growth over time.	• Measurement	• Core concepts
• Access and analyze public health statistics to establish the incidence and prevalence of various types of injuries and estimate the probability of injury related to specific risk behaviors.	• Data analysis and probability	• Accessing information • Analysis of influences
• Map a hypothetical outbreak of foodborne illness to make decisions about food preparation probability and safety.	• Problem solving	• Decision making
• Design and administer a survey on a health topic of interest, compile and analyze data, and make a formal presentation with graphics about results.	• Communications • Representation	• Interpersonal communication • Advocacy
• Use public health data from the Internet to determine the kinds of mathematics health scientists use to report important findings.	• Connections	• Accessing information

Learning About Health Through Science

The National Research Council (NRC), the American Association for the Advancement of Science, and the National Science Teachers Association contributed to the development of national science standards (Kendall & Marzano, 1997). The *National Science Education Standards* (NRC, 1996) offer a coherent vision about what it means to be scientifically literate and describe what all students must understand and be able to do as a result of their cumulative learning experiences (Trowbridge & Bybee, 1996). The eight categories of content standards include unifying concepts and processes, science as inquiry, physical science, life science, earth and space science, science and technology, science in personal and social perspectives, and history and nature of science.

Science teachers might engage students in health issues by exploring the rigors of an epidemiological investigation or by having students access scientific studies and databases related to health products and services. Students might explore questions such as these:

- How do scientists proceed when there is an unexplained outbreak of illness in a particular location?
- How and why do various over-the-counter medications differ in reducing pain?
- How reliable are various pregnancy prevention methods?
- How can information based on scientific findings be used to advocate for health?
- How can the science of psychology be used to help prevent the spread of HIV?

Unfortunately, the personal, social, community, behavioral, and affective aspects of health often have been missing in traditional science education, overshadowed by a focus on the mechanisms and processes of science. However, these distinctions are receding with the advent of science education standards that focus on inquiry, decision making, and problem solving (Allensworth et al., 1997). Teacher education programs provide an important opportunity to help educators relate scientific inquiries to the often-complicating variables of human behavior and the challenges of behavior change. Table 10 provides examples of the ways health and science can be linked.

Learning About Health Through Foreign Language Study

In 1996, the National Standards for Foreign Language Education Project published *National Standards for Foreign Language Education* (1996). The standards are organized under five goal areas for students: communication, culture, connections, comparisons, and communities.

Understanding health issues in the context of cultural differences is critical to health promotion and disease prevention efforts. For example, in various cultures, using condoms to protect against disease might be considered insulting to personal perceptions about manhood. Changes in traditional women's roles may result in family stress and even domestic violence. Cultural and lingual taboos surrounding the discussion of sexuality may limit or prohibit access to birth control information within families. Modern medical treatments may be viewed with suspicion and distrust in some cultures, to the frustration of those who seek to stop the spread of infectious disease. Customs about foods and rituals related to eating have produced confusion and prejudice among differing groups since history first was recorded. Understanding the source of these cultural differences often leads to respect and a decrease in prejudice among students.

Teacher education programs in foreign languages provide an important means to understand health customs and beliefs in cultures other than those in which educators and students live. Exploring these health customs and beliefs can provide opportunities to probe the underpinnings of communication through other languages. Table 11 suggests linkages between foreign language study and health education.

Learning About Health Through Civics and Government

In 1994, the Center for Civic Education published *National Standards for Civics and Government.* The standards are organized into five areas: (a) civic life, politics, and government; (b) foundations of the American political system; (c) government embodiment of purposes, values, and principles of American democracy; (d) relationship of the U.S. to other nations and to world affairs; and (e) the role of the citizen in American democracy.

Table 10. Linking Science With Health Education

Learning opportunity	Science standard	Health standard
• Determine differences between the causes of chronic and communicable diseases and use this information to advocate for school and community prevention education programs.	• Science as inquiry	• Core concepts • Advocacy
• Apply principles of physics to determine relationships among speed, vehicle weight, stopping distances, and reaction time in motor vehicle use and the impact of seat belts and airbags in passenger protection. Use this information to communicate personal beliefs about motor vehicle operation.	• Physical science	• Core concepts • Interpersonal communication • Self-management
• Investigate the influence of various substances on the function of various body systems and use this information for decision making and goal setting.	• Life science	• Core concepts • Decision making • Goal setting
• Determine how research in earth and space science can contribute to improved health, quality of life, and longevity.	• Earth and space science	• Core concepts • Accessing information
• Explore advances in medical technology and testing to promote health and prevent disease. Use this information to advocate for health screening and regular checkups.	• Science and technology	• Core concepts • Advocacy • Self-management
• Examine internal and external influences on health to help explain personal health decisions that conflict with scientific evidence (e.g., smoking).	• Science in personal and social perspectives	• Analysis of influences

U.S. and state legislative sessions in recent years have included debates on important health issues that have drawn the attention of citizens across age groups, including school-age youth. Tobacco legislation has been in the national spotlight along with bills related to termination of pregnancies, government approval of a variety of new drug regimens, trials and sentencing for youth accused of serious crimes, inspection of the food supply, and diverse issues related to the environment. In civics and government courses, students have opportunities to learn how government decisions are made and how they, as young citizens, can influence health-related policy, from local to federal levels.

Table 11. Linking Foreign Language Study With Health Education

Learning opportunity	Foreign language standard	Health standard
• Use languages other than English to communicate about health decisions and goals, comparing and contrasting language patterns and expression.	• Communicate in languages other than English	• Interpersonal communication • Decision making • Goal setting
• Gather information on cultural practices related to nutrition and physical activity and determine how those practices might be used to promote health.	• Gain knowledge and understanding of other cultures	• Advocacy • Self-management
• Examine health-related media to make comparisons among various cultures about the potential impact of health messages.	• Develop insight into the nature of language and culture	• Accessing information • Analysis of influences
• Join in celebrations of other cultures to communicate about health-related practices.	• Participate in multilingual communities at home and around the world	• Core concepts • Interpersonal communication

Standards for civics and government overlap most clearly with the health education standard related to advocacy for personal, family, and community health. What public health issues are important to students? How can they influence decisions related to those issues? Classes might select legislative issues to follow from start to finish, providing appropriate input to their legislators as students learn about government processes.

Teacher education programs in government also may tackle the real-world issues of public health. Local and state health issues provide many opportunities for students and educators to participate actively in advocacy activities. Health issues might be linked simultaneously with literature through reading and discussing contemporary books such as *A Civil Action*, which deals with corporate contamination of a community's water supply (Harr, 1995). Table 12 provides other examples of the way health and civics and government can be linked.

Learning About Health Through Economics

In 1996, the National Council on Economic Education (NCEE) completed the *Voluntary National Content Standards in Economics*. The NCEE developed 20 content standards that stress the importance of economics in everyday life, affecting people as consumers and producers. The standards describe the five skills that students must develop in economics as the abilities to (a) identify economic problems, alternatives, benefits, and costs; (b) analyze incentives at work in an economic situation; (c) examine consequences of changes in economic conditions and public policies; (d) collect and organize economic evidence; and (e) compare benefits with costs.

Table 12. Linking Civics and Government With Health Education

Learning opportunity	Civics and government standard	Health standard
• Track a health-related bill through state or federal legislative hearings, and examine the positions of groups that lobby for and against the bill.	• Civic life, politics, and government	• Analysis of influences
• Determine how the purposes, values, and principles of American democracy impact possibilities for decision making, goal setting, and self-management for health.	• Government embodiment of purposes, values, and principles of American democracy	• Decision making • Goal setting •• Self-management
• Examine imports and exports between the U.S. and other countries to determine possible health impact (e.g., export of American tobacco).	• Relationships of the U.S. to other nations and to world affairs	• Accessing information • Analysis of influences
• Write to a state legislator about pending policy decisions on important health issues.	• Role of the citizen in American democracy	• Interpersonal communication • Advocacy

Students of economics can examine the critical role that limited financial resources play in people's personal health choices as well as the role of the government's public health policy as it affects people's lives. Discussions of individuals' perceptions of positive and negative incentives present opportunities to explore influences on health-related behaviors. For example, does increasing the cost of cigarettes or alcohol serve as a deterrent to young consumers? Students might explore ethical questions about the degree to which government officials promote the welfare of the nation or are guided by self-interest or by the interests of lobbying groups. How might such questions be important in government decisions about access to health care, prioritizing public health spending, and the export of products such as tobacco that affect health adversely?

Teacher education programs in economics can link health and economics standards through examining government decisions about funding for health promotion and disease prevention. For example, how are public health core funds for research allotted? Are certain demographic groups or diseases funded more generously than others? How are government funds appropriated for research in health areas such as HIV and AIDS, heart disease, and cancer? How is the adequacy of funding determined? Economics standards overlap with health standards related to accessing health-promoting products and services and analyzing the influence of culture, media, technology, and other factors on health. Advocating for personal, family, and community health often necessitates understanding economic policies at local, state, and federal levels. Table 13 suggests linkages between health education and economics.

Table 13. Linking Economics With Health Education

Learning opportunity	Economics standard	Health standard
• Investigate state decisions on the use of tobacco settlement funds to determine the incentives at work in how the funds will be allocated. Use this information to stage a classroom lobbying session to compete for funds for various priorities.	• Analyze incentives at work in an economic situation	• Accessing information • Interpersonal communication • Advocacy
• Determine how changes in community economy affect availability of health services. Use this information to advocate for the continuation of important services.	• Examine consequences of changes in economic conditions and public policies	• Accessing information • Advocacy
• Compare the costs of various types of physical activity programs (health clubs, community programs, exercising individually, participating in different kinds of sports, playing with a team), and use this information for decision making and goal setting for health.	• Collect and organize economic evidence	• Accessing information • Decision making • Goal setting
• Compare costs of various kinds of foods (snack foods, fresh fruit, fast food, meats, vegetables, soft drinks, milk, juices) and determine health benefits relative to cost and the influence of cost on food selection.	• Compare benefits with costs	• Core concepts • Accessing information • Analysis of influences

Learning About Health Through the Fine Arts

In 1994, the Consortium of National Arts Education Associations completed the *National Standards for Arts Education: What Every Young American Should Know and Be Able to Do in the Arts.* The standards are organized by arts discipline, including dance, music, theater, and visual arts. The standards specify that students will communicate at a basic level in the four arts disciplines, communicate proficiently in at least one art form, identify exemplary works of art from a variety of cultures and historical periods, and relate various types of arts knowledge and skills within and across arts disciplines. The inclusion of the arts in National Education Goal 3 reaffirmed the government's commitment to the arts as essential to the education of every child (U.S. Department of Education, 1994).

The arts standards focus on communication through the arts and on understanding the arts. Arts standards link to health standards in providing students with creative avenues for personally expressing a range of emotions, for communicating through art to enhance health, and for analyzing the influence of culture and media on health. The second and third leading causes of death among adolescents—homicide and suicide—are violence related and in part indicate that youth have not had the ability or opportunity to express their emotions fully. The arts can provide opportunities to express powerful emotions in safe settings.

Teacher education programs in the arts can provide future educators with learning opportunities to explore personal, emotional, and social well-being through the media of dance, music, theater, and the visual arts. Educators and students may communicate their own feelings through the arts in conjunction with exploring the powerful works of contemporary artists and the great masters and composers of diverse cultures. Table 14 describes a number of ways health and the arts can be usefully linked.

Table 14. Linking the Arts and Health Education

Learning opportunity	Fine arts standard	Health standard
• Develop a multifaceted fine arts performance for student body or community members to advocate for particular health issues.	• Communicate at a basic level in the four arts disciplines	• Interpersonal communication • Advocacy
• Choreograph and stage a dance performance that expresses the critical balance among the mental, emotional, spiritual, social, and physical aspects of health.	• Dance	• Interpersonal communication • Self-management
• Write the lyrics and music for an original song that expresses the competing influences on decision making and goal setting and a resolution.	• Music	• Analysis of influences • Decision making • Goal setting • Self-management
• Design and stage an original play that help students understand facts and misperceptions related to HIV infection and the internal and external influences on HIV-related health decisions.	• Theater	• Core concepts • Analysis of influences • Decision making
• Sponsor a showing of class drawings, paintings, and sculptures to promote various aspects of health.	• Visual art	• Interpersonal communication • Advocacy

Learning About Health Through History and Social Studies

In 1994, the National Council for the Social Studies (NCSS) developed *Expectations of Excellence: Curriculum Standards for Social Studies*. The 10 themes that form the framework of the social studies standards include culture; time, continuity, and change; people, places, and environment; individual development and identity; individuals, groups, and institutions; power, authority, and governance; production, distribution, and consumption; science, technology, and society; global connections; and civic ideals and practices (NCSS, 1994).

History, social studies, and health are linked in distinct and important ways. For example, students might employ several of the social studies themes to examine the spread of HIV, addressing questions such as

- How has the worldwide spread of HIV been influenced by culture, environment, individual development and identity, individuals and institutions, power and authority, technology, and global connections?
- How have societies responded to HIV infected individuals?
- How have prejudice, discrimination, and fear related to HIV been demonstrated and addressed?
- How do contemporary social actions related to HIV compare with historical responses to diseases such as leprosy or tuberculosis?

Teacher education programs in social studies provide opportunities for future educators to examine their own biases related to a variety of health and social issues. Facing these biases in their own education is important before they confront students' biases in their classrooms. How do educators regard social issues such as poverty, lack of educational or employment opportunity, and other aspects of social disorganization, which are risk factors that reduce adolescent motivation to avoid pregnancy (Kirby, 1997)? How do educators perceive gay and lesbian students and adults? Do teachers feel that HIV infection results from sexual orientation or sexual behaviors and is therefore more "deserved" than other illnesses? McCall (1996) recommends that social studies use innovative teaching approaches that integrate social problems and social action into the curriculum. These approaches not only enhance learning but help students relate to real problems such as sexism, AIDS discrimination, and racism. Table 15 lists some other ways health and history/social studies can be linked.

Learning About Health Through Geography

In 1994, the Geography Education Standards Project completed *Geography for Life: National Geography Standards*. Literacy in geography is essential if students are to leave school equipped to participate responsibly in local, national, and international affairs. The purpose of standards for geography is to raise all students to internationally competitive levels to meet the demands of a new age and a different world. The 18 National Geography Standards are categorized broadly into six components: the world in spatial terms, places and regions, physical systems, human systems, environment and society, and the uses of geography.

Links between geography and health issues are important in today's increasingly mobile world. Students of geography might investigate the alarming spread of HIV around the world. Where is the disease most prevalent? How is the disease manifested in different parts of the world, and who is most likely to become infected? Where did the disease originate? Is HIV old or new? What other infectious threats do we face? How can these threats be contained or eliminated?

Teacher education programs in geography can explore these issues with candidates to lead to active student learning opportunities in geography and health. Recent books, such as *Level 4: Virus Hunters of the CDC* (McCormick & Fischer-Hoch, 1996) and *The Coming Plague: Newly Emerging Diseases in a World Out of Balance* (Garrett, 1994), paired with geographical data available on-line from federal agencies such as the CDC, open a world of intriguing study. Table 16 lists a number of other ways health and geography can be linked.

Table 15. Linking History and Social Studies With Health Education

Learning opportunity	Social Studies standard	Health standard
• Contrast the approaches various cultures use in public health messages about preventing HIV infection.	• Culture	• Core concepts • Advocacy
• Compare the nutritional habits of the people of different cultures with respect to agricultural and food production conditions and food availability. Use this information to examine influences on dietary patterns.	• People, places, and environment • Production, distribution, and consumption	• Accessing information • Analysis of influences
• Investigate reproductive rights and practices in different cultures and their relationship to individual decision making with respect to family planning.	• Individuals, groups, and institutions	• Decision making • Self-management • Analysis of influences
• Examine different forms of power, authority, and governance to determine how funds are allocated for health-related research and services and the relationship of funding to public health goals.	• Power, authority, and governance	• Goal setting • Analysis of influences
• Determine the extent to which public health practices in one part of the world can affect health status in other parts of the world (e.g., reporting and treatment of infectious diseases). Use this information to advocate for standard public health practices worldwide.	• Global connections	• Accessing information • Advocacy • Analysis of influences

Learning About Health Through Physical Education

In 1995, the National Association for Sport and Physical Education completed *Moving Into the Future: National Standards for Physical Education: A Guide to Content and Assessment.* The seven standards describe physically educated students as those who exhibit a physically active lifestyle; achieve and maintain a health-enhancing level of physical fitness; demonstrate responsible personal and social behavior in physical activity settings; demonstrate understanding and respect for differences among people in physical activity settings; demonstrate competency in many movement forms and proficiency in a few movement forms; apply involvement concepts and principles to the learning and development of motor skills; and understand that physical activity provides opportunities for enjoyment, challenge, self-expression, and social interaction.

The traditional school pairing of health education and physical education perpetuates the perception that these programs are interchangeable. However, a contemporary public health perspective views health education as a broader umbrella for organizing prevention education in the CDC's six major health-risk behavior areas, including injury and violence; alcohol and other drugs; sexual behaviors that lead to sexually transmitted diseases, HIV, and teen pregnancy; tobacco use;

Table 16. Linking Geography With Health Education

Learning opportunity	Geography standard	Health standard
• Compare the prevalence of gun-related violence and injury among different countries. Use this information to support various positions on governmental gun regulation.	• Places and regions	• Accessing information • Advocacy • Analysis of influences
• Compare the topography of various regions to examine agricultural and food production patterns and their influence on dietary selections.	• Physical systems	• Decision making • Self-management
• Compare cultural communication patterns related to health issues and the potential of these patterns to influence health behaviors.	• Human systems	• Interpersonal communication • Analysis of influences
• Compare the practices various countries use to protect their environments. Use this information to advocate for environmental protection in your own community.	• Environment and society	• Accessing information • Advocacy

dietary behavior; and physical inactivity. Thus, quality physical education programs can provide important opportunities for students to learn about healthy lifestyles and the enhancement of human performance through participating in physical activity and healthy dietary behaviors while avoiding tobacco, alcohol, and other drug use.

The School Health Policies and Programs Study (SHPPS) confirmed that physical education is an established component of the education program in virtually all states, districts, and schools in the United States (Pate et al., 1995). However, instructional practices in physical education often do not reflect the goals set by the national health objectives or the national physical education standards. The SHPPS recommended that teacher education programs in physical education be strengthened through

- Directing efforts toward increasing the emphasis placed on lifetime physical activities.
- Providing opportunities for ongoing professional development for physical education teachers.
- Increasing collaboration between physical education staff and staff working with other school health program components.
- Increasing the number of schools that require daily physical education and physical education in each grade.

Table 17 discusses opportunities to link physical education with health in meaningful ways.

Learning About Health Through Technology

In 1998, the International Society for Technology in Education (ISTE) published *National Educational Technology Standards for Students*. ISTE advocates that schools meld traditional and new approaches to prepare students to communicate using a variety of media and formats; access and exchange information in a variety of ways; compile, organize, analyze, and synthesize information;

Table 17. Linking Physical Education With Health Education

Learning opportunity	Physical education standard	Health standard
• Describe ways in which you can promote a physically active lifestyle for yourself and for your family.	• Exhibit a physically active lifestyle	• Self-management • Interpersonal communication
• Make decisions about appropriate fitness goals and make a plan to achieve them.	• Achieve and maintain a health-enhancing level of fitness	• Core concepts • Decision making • Goal setting
• Observe the behavior of participants and observers in various physical activity settings and their reactions to various events. Describe agreements and responsibilities that should be assumed by all.	• Demonstrate responsible personal and socia behavior in physical activity settings	• Accessing information • Analysis of influences • Advocacy • Self-management
• Design a plan for a physical activity facility that demonstrates access and respect for all participants.	• Demonstrate understanding and respect for differences among people in physical activity settings	• Core concepts • Advocacy

draw conclusions and make generalizations based on gathered information; use information and select appropriate tools to solve problems; know content and be able to locate additional information as needed; become self-directed learners; collaborate and cooperate in team efforts; and interact with others in ethical and appropriate ways.

ISTE (1998) also describes new learning environments that can support health education. These environments incorporate student-centered, rather than teacher-centered, instruction; collaborative work, rather than isolated work; information exchange, rather than information delivery; active/exploratory/inquiry-based learning, rather than passive learning; critical thinking and informed decision making, rather than factual, knowledge-based learning; proactive/planned action, rather than reactive response; and authentic, real-world learning contexts, rather than isolated, artificial contexts.

The technology standards address social, ethical, and human issues and technology tools for communication, research, problem solving, and decision making. These ideas mesh readily with health education standards related to accessing valid health information; analyzing the influences of culture, media, and technology on health; and advocating for personal, family, and community health.

Students can learn about health and technology by accessing current information from reliable sources on the Internet. Students might exchange e-mail messages with youth in other parts of the U.S. or the world to compare health status, community policies, and school-based health education. In addition, students may develop their own videos, CD-ROMs, or Web pages to advocate for health. Teacher education programs in technology can assist educators in learning to access current health-related information through the latest technological means. Table 18 provides other examples of how health and technology can be linked.

Table 18. Linking Technology and Health Education

Learning opportunity	Technology standard	Health standard
• Access health-related information through the Internet and design a web page to communicate your recommendations for personal action.	• Access and exchange information in a variety of ways	• Accessing information • Self-management • Advocacy
• Design a survey on various influences on health-related behavior. Organize and present your data with a PowerPoint or other computer-generated program.	• Compile, organize, analyze, and synthesize information	• Accessing information • Analysis of influences
• Access valid information sources to assist with decision-making and goal-setting processes on a particular health topic.	• Use information and select appropriate tools to solve problems	• Accessing information • Decision making • Goal setting
• Become an "expert" on a health issue of interest. Communicate and get feedback on your findings using at least two software applications.	• Know content and be able to locate additional information needed	• Accessing information • Interpersonal communication

Summary

The potential for learning opportunities in PK-12 curricula and teacher education programs based on the blending of national education standards, major subject areas, and priority health-risk issues is great. The connections between health issues and national standards offer tremendous opportunities to provide multifaceted and consistent messages to young learners about promoting health and safety.

Identifying these connections, however, is not sufficient to ensure their implementation in teacher education programs and PK-12 curricula. Schools, colleges, and departments of education (SCDEs) and state and local education agencies (SEAs/LEAs) must take deliberate steps to identify potential links among priority health-risk issues and subject area standards in teacher education programs.

One priority health area in which consistent messages need to be delivered is HIV prevention. The following discussion provides specific ideas for establishing connections between HIV prevention and national academic standards.

USING NATIONAL STANDARDS TO GUIDE TEACHER EDUCATION ABOUT HIV PREVENTION

Effective HIV prevention education must be a priority issue for teacher education programs and PK-12 schools across the nation. Over 43.7 million children and youth attend elementary or secondary schools. Moreover, virtually all youths attend school before they initiate sexual risk-taking behaviors, and a majority are enrolled when they initiate intercourse (Kirby et al., 1994). Consequently, teachers have compelling opportunities to make an impact through HIV education and related health instruction. SCDEs are ideally positioned to prepare preservice teachers for this role through provision of current content and methods for teaching about HIV/AIDS prevention. National subject area standards, particularly in health education, can help teacher education programs prepare educators to focus on the essential elements of prevention education related to HIV.

HIV Education in Health Education

Popham (1993) stated that HIV prevention education must provide students the functional knowledge they need to avoid becoming infected or infecting others; skills to avoid, get out of, or take appropriate protective action in HIV risk situations; and motivation to use the HIV-relevant knowledge and skills they have acquired. HIV prevention education must be of sufficient duration to influence behaviors that stem from powerful psychological and physiological forces. Most adolescents are very knowledgeable about HIV (*Sex Education in America*, 2000). However, interventions that go beyond knowledge development and that focus on reducing risk behaviors need to be implemented to prevent the spread of HIV (Mueller, Bidwell, Okamoto, & Mann, 1998).

Teacher education programs must prepare educators to teach about HIV prevention through methods that are consistent with research on changing HIV-related risk behaviors among youth. Kirby (1997) described effective programs as those having the following nine characteristics:

1. Focus clearly on reducing sexual risk-taking behavior.
2. Incorporate behavioral goals, teaching methods, and materials that are appropriate to the age, sexual experience, and culture of the students.
3. Are based on theoretical approaches effective in other areas.
4. Last a sufficient length of time to complete important activities.
5. Provide basic, accurate information about risks of unprotected intercourse and methods of avoiding unprotected intercourse.
6. Use teaching methods to involve students and help them personalize information.
7. Address social pressures on sexual behavior.
8. Provide modeling and practice in communication and refusal skills.
9. Select teachers or peers who believe in the program and then provide training for those individuals.

Lohrman and Wooley (1998) applied the National Health Education Standards to the area of substance abuse prevention. Constructing a similar framework for HIV that employs the National Health Education Standards at grade levels PK-4, 5-8, and 9-12 ensures that all standards are addressed across age groups within the context of HIV prevention education. Table 19 describes the application of these standards in terms of educational goals for students at each grade level.

Table 19. HIV Prevention Education: Application of the National Health Education Standards by Grade Level

Standard	PK-4	5-8	9-12
1. Core concepts	• Describe HIV as an infectious disease. • Explain that HIV is not transmitted through casual contact. • Describe correct procedures for handling blood or other body fluids. • Explain why it is safe to go to school with classmates who have HIV.	• Describe behaviors that do and do not transmit HIV. • Explain why behaviors, rather than who people are, transmit HIV. • Debunk myths and misperceptions about HIV transmission and people living with HIV. • Describe abstinence from sex and needle use as the only sure ways to prevent HIV infection.	• Explain why people can live with HIV without showing signs of illness. • Explain why a person's appearance does not reveal HIV status. • Explain that HIV compromises the immune system, making people susceptible to diseases associated with AIDS. • Describe treatments that show promise for helping people with HIV live longer and healthier.
2. Accessing information, products, and services	• List parents, teachers, and other trusted adults as information sources about HIV. • Explain that media may contain misinformation about HIV.	• Name agencies and organizations that provide accurate information about HIV over the Internet. • List Internet sites and toll-free phone numbers that provide accurate information about HIV.	• List organizations that provide reliable HIV testing. • Describe the correct and consistent use of latex condoms to help prevent HIV infection.
3. Self-management	• Practice universal precautions to help protect against HIV and other diseases. • Demonstrate self-care for nosebleeds and scrapes.	• Practice abstinence from sexual behaviors and needle use to protect against HIV. • Abstain from alcohol and other drug use, which influence HIV-related risk behaviors.	• Describe personal commitment to protect self and others from HIV infection. • Role-play ways to avoid, leave, or negotiate to protect oneself in HIV risk situations.
4. Analysis of influences	• Discuss family influences on health beliefs and behaviors. • Describe media messages related to health behaviors.	• Analyze the influence of friends, as well as family, on health behaviors. • Examine personal beliefs, likes/dislikes, attitudes, and experiences as influences on health behaviors.	• List pressure lines others may use to promote risky behaviors. • Evaluate the strength of various influences on HIV protective or risk behaviors.
5. Interpersonal communication	• Tell others how to protect themselves against blood and body fluid spills. • Communicate care and support for people living with HIV.	• Practice effective responses to avoid or leave HIV risk situations. • Communicate to help others avoid or leave HIV risk situations.	• Demonstrate negotiation skills to protect oneself in an HIV risk situation. • Communicate to help others avoid or leave HIV risk situations.

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Table 19. HIV Prevention Education: Application of the National Health Education Standards by Grade Level (continued)

6. Decision making and goal setting	• Describe important decisions for staying healthy. • Set personal goals for staying healthy.	• List important steps in decision making to protect oneself against HIV infection. • Set personal goals that provide reasons to stay healthy.	• List important steps in decision making to protect oneself against HIV infection. • Set personal goals that provide reasons to stay healthy.
7. Advocacy	• Discuss healthy lifestyles with family members. • Create a classroom book about how to treat a friend who has special health needs.	• Design an advocacy campaign to help eliminate misperceptions about HIV. • Support others who make positive health choices.	• Serve as peer educators to inform others about HIV and important health practices. • Advocate for effective HIV education for all grade levels.

Incorporation of the National Health Education Standards into HIV prevention education should provide many active learning opportunities. For example, teams of students might design and conduct a survey of students, parents, teachers, and community members about their knowledge of HIV facts and misperceptions, subsequently analyzing the data and reporting their findings. This performance task could be used to assess students' comprehension of core concepts related to HIV prevention. Similarly, students might write and role-play a dialogue between two adolescents who are considering becoming sexually active. In addition to demonstrating their understanding of concepts related to HIV risk behaviors, students also can demonstrate their communication, decision-making, and advocacy skills to prevent HIV and to enhance health.

HIV Education in Other Curricular Areas

All students should have specific instruction about preventing HIV infection as part of contemporary school health education. However, the overall PK-12 curriculum provides many additional opportunities to support and reinforce HIV prevention messages. *Teacher education programs should prepare all teachers to address this critical public health issue in their classrooms, as questions arise and as a deliberate part of their curriculum.* SCDEs and SEAs/LEAs can work toward this important integration though a variety of approaches in different subject areas. The first section of this paper described numerous strategies for incorporating health information into teaching various subject areas. Many of the examples involved information related to HIV. Table 20 provides additional examples of ways to incorporate HIV information across the PK-12 curriculum.

Table 20. Learning About HIV Prevention across the PK-12 Curriculum

Subject area	Links to HIV prevention education
English language arts	• Read fiction and nonfiction related to HIV infection, living with HIV, effects on families, death and dying, and issues of discrimination. • Write a story about a young person infected with HIV. • Dramatize situations related to HIV issues, such as discrimination, decision making, and going for testing.
Mathematics	• Design a mathematical model to show the potential spread of HIV infection resulting from unprotected intercourse with multiple partners. • Calculate potential years of life lost to HIV infection among U.S. adolescents and young adults.
Science	• Identify the period during which HIV antibody testing reflects infection and explain why. • Describe the challenges scientists face in developing an HIV vaccine.
Foreign language study	• Compare culturally sensitive methods of teaching about HIV prevention education in various cultures. • Describe differences in languages used to discuss HIV risks.
Civics and government	• Explain U.S. efforts to research and prevent HIV infection. • Compare government intervention for HIV prevention education among different countries.
Economics	• Estimate the impact and potential impact of HIV on the U.S. economy. • Calculate the costs of prevention versus treatment for HIV infection.
Fine arts	• Study the works of artists who have lost their lives to HIV. • Review photography, cinema, theater, and music related to HIV and AIDS.
History and social studies	• Compare the spread of HIV with the spread of other epidemics in history. • Examine the social stigma associated with HIV and AIDS in various societies.
Geography	• Track the spread of HIV around the world. • Examine differences in access to treatment and care around the world.
Physical education	• Describe the role of physical activity in overall health. • Debunk myths about HIV infection and athletic participation.
Technology	• Locate the most current and accurate information about HIV on the Internet. • Design persuasive HIV prevention education materials for peers.

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HELPING TEACHER EDUCATION PROGRAMS SUPPORT TEACHING AND LEARNING ABOUT HEALTH

Recommendations

How can teacher education programs ensure that today's educators, whether in health or in other subject areas, are prepared to address priority health-risk issues in their classrooms? Schools, colleges, and departments of teacher education as well as state and local education agencies should consider the following five recommendations:

1. Educate all teachers across all areas of the curriculum about priority health-risk behaviors that threaten today's children and adolescents.

Students bring their health needs, just as they bring their academic needs, to all teachers' classrooms. Educators across the curriculum should receive professional preparation to help their students find accurate answers to their questions and to respond appropriately to volatile classroom situations that sometimes arise from students' health-related needs. Recent publications in education such as *Promoting Social and Emotional Learning* (Elias et al., 1997) underscore the critical importance of supporting young people in every aspect of their development.

Former Surgeon General Dr. Joycelyn Elders summarized the connection between health and learning as follows:
It has been said that you can't educate a child who isn't healthy and you can't keep a child healthy who isn't educated. I think that statement succinctly states the challenge before all of us who want to improve the health and educational status of our children. Clearly, poor health in all its dimensions adversely affects school performance. And, increasingly, the threats to the health of our children are not biomedical in origin. Injuries, homicide, suicide, pregnancy and substance use are experienced by American youth at alarming rates. These contemporary morbidities are primarily the result of social environment and behavior. We must give greater priority to policies and programs that advance preventive health care practices. At issue is whether we want to invest now or pay later. . . . I think the most promising strategy we can invest in is comprehensive school-based health education. (Cortese & Middleton, 1994 pp. xi-xii)

2. Ensure that PK-12 teacher education in health is focused on the National Health Education Standards and on the priority health-risk behaviors that pose the greatest threats to young people.

Today's health education must provide children and adolescents with the knowledge and skills they need to protect their health and safety as well as that of others. The National Health Education Standards necessitate a skills-based approach to teaching. Health education should consist of a planned, sequential course of study, ideally put into practice as part of a coordinated school health program (Marx, Wooley, & Northrop, 1998). Students will benefit most when schools employ teachers who are qualified in and, importantly, who want to teach health education and who want to see health-related information integrated into other subject areas.

3. Help teachers across the curriculum identify the links between their subject area standards and priority health risks, and incorporate these important health issues into their everyday teaching.

The School Health Policies and Programs Study (Collins et al., 1995) revealed, not surprisingly, that health education specialists were likely to teach more health topics than those who infused health into other required subjects. However, this finding raises the question of how deliberate teacher education programs have been in helping other teachers learn to use health issues as a basis for real-life teaching in their classrooms. Teacher education programs can assist educators in bringing newsworthy health issues into their classrooms on a regular basis and by demonstrating content and strategies for doing so.

4. Relate issues of multicultural education and diversity specifically to health-risk behaviors.

Issues of cultural and ethnic diversity must be woven throughout all foundational areas of teacher education (Gay, 1997). Teacher education programs often afford important considerations to teaching diverse learners in the areas of reading, writing, and language development. However, multicultural education and diversity are equally important when educators address the health-related needs and risk behaviors of their students.

Gay described effective teachers of ethnically, linguistically, and culturally diverse students as "multicultural activists and advocates who teach, value, model, and promote cultural diversity in the classroom . . .. Skillful teachers use student-centered, process, and experimental approaches to teaching; employ thematic or topical curriculum structures; provide opportunities for active learning; and employ collaborative interactions among students" (1997, pp. 201-202). Students' cultural beliefs and traditions related to health practices impose important filters on the messages they receive in school. Teacher education programs must help educators expand their thinking and experiences to respond sensitively and helpfully to the varying family and cultural backgrounds their young learners bring to school.

5. Model and promote active involvement in learning through meaningful health-related teacher education experiences.

Sileo, Prater, Luckner, Rhine, and Rude (1998) reminded teacher educators that "learning is not merely the acquisition of knowledge delivered from teachers to students. Rather, effective learning is predicated on students' active participation in the learning process, interactive communication with their peers and instructors, and the application of new knowledge to their current experiences" (p. 187). Though traditional didactic learning approaches have persisted in university programs, Sileo et al. recommended a wide variety of active strategies to engage teacher education students in their own learning. These active learning strategies include role-playing, technology-based simulations, service-learning, learning journals, videotapes with peer-assisted reflection, field-centered teacher preparation, and action methods such as icebreaker activities, continuum activities, opinion maps, storyboarding, concept maps, cooperative learning activities, jigsaw, and think-pair-share. When teacher educators employ such diverse strategies for learning about health, teacher education students experience learning in ways that can, in turn, be used effectively in their own classrooms.

Overcoming Barriers to Collaboration

Programs for teacher education in health traditionally are located in departments of health, physical education, and recreation and often operate somewhat separately from teacher education programs in the "core" subject areas of language arts, mathematics, science, social studies, and the arts. Courses

in health education or physical education may be required for education majors in other fields. However, faculty members from different departments may not work together to promote understanding about the goals, objectives, and nature of their respective programs. For example, most education faculty members may have little knowledge of or experience with the standards for today's health education.

The perceptions teacher education faculty members have about health education may be influenced by their own prior school experiences. Some will remember little or no health education at all in their PK-12 schooling. Others will remember health instruction that had little, if anything, to do with their own lives. In addition, health education, unlike language arts, mathematics, science, social studies, or the arts, may be viewed by some as information that can or should be provided at home. Clear explanation of the standards for school health education can assist educators, parents, and community members in understanding the intent of today's programs. Discussions about the content that should be taught can be initiated through conversations about the mutual goal that educators and parents share to help children and others remain healthy and safe.

Barriers to collaboration also include competition for time and resources. School and teacher education curricula often are overcrowded. What is eliminated when budgets are restricted? The arts? Health education? Physical education? All facets of the curriculum are necessary if schools are to maintain their growing perspective on educating and responding to the whole child. One area cannot be sacrificed to support another. All curricular areas are essential to the development, education, and health of school-age children and adolescents.

Sharing Responsibility

Collaboration in teacher education programs to promote the health of children depends on bringing all stakeholders to the table. Health educators must work more closely with general educators and with the decision makers who hold the keys to teacher education programs. State and local education agencies must ensure the placement of qualified health educators in their schools. Schools must maintain a standards-based focus in PK-12 health education. Specific actions are important for each group to help make collaboration a reality, as summarized in Table 21.

Table 21. Collaboration for Teacher Education in Health

Health educators

- Communicate clearly about today's school health education in terms of the National Health Education Standards and priority health-risk issues.
- Build bridges with departments that house other subject areas.
- Become informed about important issues in other subject areas.
- Participate as members of elementary and secondary teacher education faculties.
- Collaborate with other departments on campus that support health education.

Faculty in other subject areas

- Ensure preparation in school health education as a priority in teacher education programs.
- Collaborate with health education faculty members to develop learning opportunities for school health education across the teacher education curriculum.

Schools, colleges, and departments of education

- Review teacher education course work in health education to ensure alignment with the National Health Education Standards and priority health-risk issues.
- Ensure that the health education curriculum is distinct from the physical education curriculum.
- Build bridges among departments to support teacher education for school health.
- Ensure that future educational administrators understand today's school health education and criteria for hiring qualified teachers.

State and local education agencies

- Establish licensing, certification, endorsement, and hiring policies that ensure qualified instructors in school health education.
- Ensure that curricula reflect National Health Education Standards, priority health-risk issues, and research on effective programs.
- Provide professional development opportunities in school health education for teachers, counselors, curriculum directors, and administrators.
- Combine health-related federal and state funds to support coordinated school health programs.
- Establish partnerships with agencies outside education to support school health.
- Enlist parents as advocates for today's school health education.

Access to meaningful and engaging learning opportunities about the personal and social health issues that challenge young people is critical to the success of schools that offer all students the right to learn.

The personal component of commitment is described well by Al and Jane Nakatani. The story of their family, told in the book *Honor Thy Children* (Fumia, 1997), illustrates the critical need for schools, parents, community members, and SCDEs to engage young people in education to keep themselves and others healthy and safe. The Nakatanis had experienced the deaths of all three of their sons. Two of their sons, who were gay, had contracted AIDS, and their other son had been killed in a shooting. Realizing that much-needed communication and understanding had been absent in his family's life, the father reflected:

I don't know when I first considered the idea that the fates of my three sons were somehow bound together. I know it terrified me. I was afraid I might be the connecting link. I started thinking about it all the time. Had I made a mistake? Did I misperceive? I needed to know. It became so clear. As much as I loved them, and I did love them so much more than I was ever able to communicate, I had fallen far short as a parent. Life dealt us lousy blows, but I had to own up to the part I played in it all. My perceptions failed me, and for a person like me to have missed so much, to have unknowingly contributed to my sons' confusion and pain and isolation . . . don't you see? I participated in the problem, rather than the solution. I understand now. Someone has to take responsibility for wreaking havoc on innocent lives. Our fear, our hatred, our collective ignorance—for God's sake, I was one of the voices of denigration. What's wrong with you? All the other boys are taking showers. Be a man. Stand up for what is rightfully yours. Don't act like a girl. Where's your substance? And worst of all I told them that failing meant dishonoring an entire family. Can you imagine what it was like for our sons to hear these things? This is who I am, a person who needs to know what I did wrong so that the next time I'll manage the relationship better. The sad thing is that I have no children, no relationship left to manage. (pp. 240-241)

The hope of *Honor Thy Children* is to forestall tragedy for others: "We have to care about every child as we would care about our own" (p. 313). This is the challenge for including health education in teacher education programs and PK-12 classrooms: to ensure that safe passage of our young learners from childhood to adulthood is an important priority in all our education programs.

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APPENDIXES

Appendix A

Interprofessional Collaboration at the University of Hawaii at Manoa

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Schools, colleges, and departments of education traditionally are composed of many divisions that contribute to teacher education. Colleges of education may include various programs in counselor and guidance education; curriculum and instruction; educational administration; educational foundations; educational psychology; educational technology; health, physical education, and recreation; and teacher education. How might these programs collaborate to promote effective teacher education related to health education standards and priority health-risk issues?

At the University of Hawaii at Manoa, the College of Education has begun the process of building interprofessional collaboration for teacher education in health. Two college-wide task forces, which focused on the health-risk issues of HIV and violence prevention, resulted in two new graduate courses, developed and implemented as summer institutes.

The first course *HIV, Other STD, and Pregnancy Prevention Education*, involves collaboration among faculty members from teacher education, special education, educational psychology, the School of Social Work, and the School of Medicine. The course is supported by the Hawaii State Department of Education, the Hawaii State Department of Health, and other community agencies and service providers. The Hawaii State Department of Education provides tuition stipends for teachers who participate in the institute. The cohorts from each summer institute work with other classroom teachers as mentors and attend quarterly meetings with university faculty and department of education health education staff. These summer institutes, begun in 1998, are an important part of the Hawaii Department of Education's plan for HIV prevention education.

The second course, *Safe Schools and Communities: A K-12 School-Wide Approach to Promoting Peace and Preventing Violence Among Hawaii Youth*, involves collaboration among faculty members from teacher education, counselor education, and special education. The Hawaii State Department of Education provides tuition stipends for participants during the summer institutes, which were begun in 1997. Participants include elementary, middle-level, and secondary teachers, administrators, and counselors from K-12 schools across Hawaii. Participants work in teams to produce action plans for their schools to implement during the following academic year.

In addition to these institutes, two other courses have been developed, and others are in the planning stages. A third new graduate course developed for teachers is *Seminar in Health Education: Teaching With the New Hawaii Health Content and Performance Standards*. This course, which focuses on the Hawaii Health Standards and the nine content assessment areas identified by the Council of Chief State School Officers State Collaborative on Assessment and Student Standards (1998), is designed to assist health education teachers and teachers from other subject areas in incorporating health issues into their lessons. Teachers report finding many ways to incorporate health issues into their curricula. For example, a high school geometry teacher used students' questions about drinking and driving to develop conditional statements and chains of reasoning, following the death of Diana, Princess of Wales.

At the undergraduate level, a new course titled *Personal and Social K-6 Health Skills* is now required for all preservice elementary teacher education majors. The course helps future elementary teachers incorporate skills-based health instruction across all aspects of the curriculum. Faculty members from teacher education and counselor education collaborated to design this course, which includes a strong teacher skills component.

New teacher institutes offered for the first time in 2001 include *Teaching for Healthy Nutrition and Lifelong Physical Activity* and *Building Resiliency to Prevent Tobacco, Alcohol, and Other Drug Use Among Hawaii Youth*. Ongoing courses related to priority health-risk issues include a special education course titled *Characteristics and Strategies for Teaching At-Risk Students*. This course focuses on the educational, behavioral, and emotional characteristics of students who are at risk for school failure. The Department of Counseling and Guidance provides course work in other areas such as substance abuse counseling; child abuse counseling practice and theory; and marriage, family, and child counseling. The Department of Kinesiology and Leisure Sciences teaches courses in personal health and wellness and in substance abuse education. The Department of Food Science and Human Nutrition is working with the Department of Teacher Education and Curriculum Studies to certify nutrition majors as secondary science teachers. The School of Public Health approved a doctoral-level seminar on the coordinated school health program, which possibly can bring public health and education graduate students together.

Two of the strongest supporters for rebuilding teacher education in school health have been the Hawaii Department of Education and the American Cancer Society Hawaii, Pacific, Inc. The Department of Education developed new standards for health education as 1 of 10 content areas included in its Hawaii Content and Performance Standards II, released in 1999. During the same year, the American Cancer Society initiated a Comprehensive School Health Education Committee, which led to the formation of the Hawaii Partnership for Standards-Based School Health Education (Pateman, Irvin, Nakasato, Serna, & Yahata, 2000). Thus far, this partnership secured corporate funding for 15 teacher workshops on health standards, new materials for classroom teachers, a statewide health education conference, and a "Got Health?" ad campaign on half-pint and half-gallon Meadow Gold Dairies milk cartons, promoting the health education standards during the 1999-2000 academic year.

College of Education faculty members acknowledge that more work is necessary. Education about priority health-risk issues must become more widely available for secondary preservice education majors. The secondary health education major, eliminated during difficult economic times, must be rebuilt. The College of Education also must ensure that the preparation of educational administrators is in place to enable them to provide leadership in addressing the health-related needs of their students and to ensure the hiring of qualified health education teachers.

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APPENDIX B

Health Promotion in Teacher Education at Kent State University

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Kent State University

As a foundational element of a broader commitment to education reform, states have invested significant energy in evaluating and improving the content and process of teacher education. Like many of their counterparts in other states, the Ohio Department of Education (ODE) embarked on a sweeping agenda to redesign teacher education in the state in the early 1990s.

In addition to ensuring that all programs were brought into compliance with practice guidelines identified by the learned societies associated with the range of teacher education disciplines, the ODE replaced the state's model for teacher certification with a revised protocol of teacher licensure. More than merely a change in semantics, the ODE moved to authorizing postsecondary institutions with teacher education programs to grant one of five teaching licenses:

- Early Childhood (age 3-Grade 3)
- Middle Childhood (Grades 4-9)
- Adolescent-Young Adult (content specialist, Grades 7-12)
- Multi-Age (age 3-Grade 12, including health, art, music, physical education, dance, and foreign language specialists)
- Intervention Specialists (K-12)

Implementation plans developed by ODE specified compliance protocol for all teacher education programs in the state. The curricular revision and state review processes were forced into a compressed time line. As a result, postsecondary institutions began to offer revised and approved programs at the start of the 1998-1999 academic year.

This process of revising all teacher education curricula at Kent State University, one of the public institutions affected by the changes, provided a timely opportunity for college faculty to evaluate the extent to which graduating students were equipped to manage the range of health issues confronting school-age children and youth. Tragic yet coincidental, a number of highly publicized school-based violence incidents provided reinforcement of the notion that teacher education majors needed to be equipped with a repertoire of skills beyond those necessary to effectively manage the process of content delivery within their identified discipline. In addition, a number of teacher education faculty expressed concern about the extent to which health risks including HIV/AIDS, suicide, and eating disorders were threatening the academic success of school-age children and youth.

In this spirit, the faculty in Health Education and Promotion, an academic program area housed in the College and Graduate School of Education at Kent State University, were charged with the responsibility of developing effective learning experiences to be integrated into the teacher education curricula across the range of represented content areas. Two university courses emerged from this development process.

Historically, Health Education and Promotion faculty had been offering a course for students majoring in early childhood education. This course was updated to comply with the revised early

childhood licensure protocol. The content and learning experiences in the class were modified to focus on developmentally appropriate health themes and issues facing young learners. Field experiences were added to the course enabling teacher education students to practice planning, implementing, and evaluating developmentally appropriate instructional activities. Finally, strategies focused on disease prevention and child abuse intervention and advocacy prescribed by the state were integrated into course content.

The second class was developed to meet the needs of school-based educators with no primary responsibility for providing health instruction for students. In addition to middle-childhood and special educators, this course was organized for students in content specialty fields including integrated language arts, math, vocational, and technology education. Course content and learning activities were organized to equip teacher education students to be proactive members of a coordinated team of professionals and community advocates addressing the range of developmentally consistent health issues facing middle and high school students.

This course, "Health and Learning: Strategies for Students and Teachers," is grounded in the body of literature confirming that school success for students and the effectiveness of education professionals often are compromised by student health status and associated risk behaviors. Importantly, because there is no text that addresses the specific elements of this course, a series of readings from the bodies of literature in health promotion and education are placed on electronic reserve for student use. In this way, students practice using this library service, and course readings can be updated on a regular basis. While faculty have the flexibility to address additional concepts and add new readings, the following foundational issues have been approved by university curriculum bodies for inclusion in the course:

- An analysis of behaviors that threaten the health and academic success of learners (six priority areas identified by the Centers for Disease Control and Prevention: intentional and unintentional injuries; tobacco, alcohol and other drugs; sexual behaviors resulting in STDs, HIV/AIDS, and unintended pregnancy; poor dietary behaviors; and physical inactivity)
- The Coordinated School Health Program (efficacy, policy, and practices)
- Compliance with universal precautions for managing bodily spills in the educational environment
- Parent engagement as a foundation for enhanced school success (National PTA Standards)
- Child abuse mandated reporting and advocacy protocol
- CPR and First Aid Certification

Initial concerns about this course focused on two important matters: staffing concerns within the Health Education and Promotion program area and placement, time, and fit issues within teacher education programs whose students would be consumers of this course. Currently, the course is staffed by health education faculty and doctoral-level graduate students who have had K-12 teaching experience. While the social studies, science, and foreign language programs do not include this course as a requirement, all other teacher education programs in the college now require students to complete one of the identified courses to graduate.

This updated approach to managing student health across the range of teacher education programs at Kent State University is in early stages. Importantly, colleague discussions and student evaluations conducted at the end of each semester for both courses have been overwhelmingly positive. While the challenges of balancing time and staffing matters are inevitable, formal evaluation protocols are being organized. In addition, a recent evaluation of the revised Middle-Childhood Education program by the National Middle School Association identified the "Health and Learning: Strategies for Students and Teachers" course among others as commendable in this program of studies.

Integration for Healthier Schools: A Partnership Approach

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The State of New Mexico has a clear vision for the future of children and families. State level initiatives have been developed that cut across agency lines and seek to provide stronger collaboration targeted at school health. These collaborative efforts among the New Mexico State Department of Education, New Mexico State Department of Health, institutes of higher education, and other agencies have led to shared responsibility for the health and education of New Mexico's children.

Major initiatives in New Mexico that address issues of health and education share two commonalties: the focus on community and community empowerment and the collaboration among state agencies and between state agencies and institutions of higher education. The following two projects exemplify recent collaborative efforts in the state.

Educational Administration Internship Program

The preparation of school leaders for the 21st century demands greater attention than ever before to meet the needs of students and their families. There is growing evidence that schools cannot successfully educate students without positive, effective partnerships with their communities. An understanding of the changing nature of community is central to the ability of school administrators both to understand inherent needs and resources and to respond effectively to the needs of multiple groups.

The collaboration between the University of New Mexico Educational Administration Internship Program and an effort called the School Health Modules Project has provided graduate students who are completing their administrative internship an opportunity to expand their study and concept of community resources and to learn strategies for promoting wellness and resiliency among students, educators, and communities. The expectation is that interns will make use of these strategies and resources in the implementation of individual school-based projects.

This collaboration promotes future school leaders' understanding of the importance of promoting links between the school and various resources and agencies in the community and of the range of community services that are available to support and enhance the educational development of students. Future school administrators also learn to appreciate the role varied organizations and associations can play in enhancing education. Administrative interns also learn to understand more fully and directly the special challenges confronting community groups and governmental agencies. A more holistic view of education is fostered, in which the school is increasingly seen as one essential part of a much larger community.

School Health Education Institute

In New Mexico, health education is required to be taught in public schools. However, as in many states, there is no state-level graduation requirement for health education. Therefore, school districts are given local autonomy to choose how health education will be delivered. It is usually provided in one of two ways:

1. Health education content can be provided in a "required" health education class. If this option is chosen, the health education class must be taught by a certified/licensed health educator. Approximately 1% of school districts in New Mexico choose this option.
2. Health education content can be integrated into other required subject areas (e.g., nutrition can be taught in science class, human sexuality and HIV in social studies). This integrated approach is the primary choice for the delivery of health education content in New Mexico public schools.

The fact that most of New Mexico's public schools choose to integrate health education content rather than offer a separate course has resulted in the need for other specialty area teachers to have knowledge of health and integrate its topics into their subject areas. This situation prompted the New Mexico State Departments of Education and Health to partner with the University of New Mexico, New Mexico State University, Santa Fe Community College, and others to plan professional development to target non-health educators. This partnership consisted of multidisciplinary teams of school health professionals who planned and implemented the first School Health Education Institute.

The School Health Education Institute provided training in five areas: HIV prevention/sexuality; alcohol, tobacco, and other drug use; nutrition; physical activity; and violence and injury prevention. The institute provided participants with

- Knowledge, skills, and increased capacity to integrate health topics into their primary curricular area
- Current information and materials specific to the health-related topics they are being asked to teach
- A plan for district teams to determine integration strategies
- A network of health professionals who can provide technical assistance throughout the school year
- Knowledge and skills that will help students meet or exceed the required benchmarks and content standards for health and physical education

Because of New Mexico's vast geographic distances and isolation of some rural communities, collaboration is essential to provide resources for the health and education of children and youth in this state. The partnerships between health and education in New Mexico have resulted in better delivery of services, more accountability, and a stronger public health and education effort overall.

Integrating Comprehensive School Health Programs Into Preservice Teacher Education: Results of a Multidisciplinary Initiative in Wisconsin[1]

Douglas White
Wisconsin Department of Public Instruction

Background and Overview

The inclusion of comprehensive school health programs (CSHP) in preservice educator preparation in postsecondary institutions is limited. To support the development of such programs, the Wisconsin CSHP of the Department of Public Instruction and Department of Health and Family Services created an initiative to build on existing collaboration with postsecondary institutions.

Technical assistance, educational materials, and small grants were made available to a broadly interdisciplinary group of selected departments across the University of Wisconsin system to integrate Wisconsin's Framework for Comprehensive School Health Programs into preservice teacher education during the 1997-98 school year. Faculty and departments were selected on the basis of readiness evidenced by previous related work, diversity of program areas, and overall strength of existing programs. Faculty committed to integrating the state's framework into one or more undergraduate or graduate courses, reflecting on their experiences and learning, and writing a report and journal or newsletter article describing these. Participants agreed to share the results of this work with other Wisconsin educators through professional meetings, conferences, and telecommunications.

Wisconsin's Framework for CSHP

Developed by state and local leaders in response to Wisconsin's rich history of school-based prevention, health promotion, and youth development and based on a thorough review of research literature and program experience, Wisconsin's Framework for Comprehensive School Health Programs offers a very broadly multidisciplinary approach (see Figure 1). For example, it recognizes that learning about health and safety issues and the necessary social competencies to prevent health and social problems needs to be part of every classroom, hence the single component *Curriculum, Instruction, and Assessment.* The framework equally values the contribution of all pupil-services disciplines and their work as a collaborative team.

Highlights of Activities to Integrate Wisconsin's Framework for CSHP Into Preservice Preparation of School Personnel

University of Wisconsin-Madison, School of Social Work
Program Area: School Social Work

- Involved a wide variety of instructional methods including seminar, cooperative learning group, practica, and peer teaching in a core graduate course in school social work.

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[1]The appendix is based on a presentation made at The National Leadership Conference to strengthen AIDS/HIV Education and Coordinated School Health Programs, Atlanta, GA, August 13, 1998.

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Figure 1. Wisconsin's Framesork for Comprehensive School Health Porgrams

- Found Wisconsin's framework to be a useful model to teach about the range of social work practice in schools. Practicum students explored practice using different components.
- Linked CSHP to core concepts of resiliency, school-based services, and academic achievement.
- Students conducted an assessment of their school using the framework and provided inservice sessions to school social workers and nurses.
- Students attended an adolescent health symposium and taught other students in seminar.
- School plans to continue to use CSHP framework, linked to units on resiliency and roles of school social workers; develop cooperative learning groups on each component to help students focus on one area of practice; implement joint seminars with other field units, including developmental disabilities, health, and human services, to encourage development of CSHP, collaborative partnerships, and school-linked services.

University of Wisconsin-Madison, School of Education
Program Areas: Counseling Psychology, School Psychology, Rehabilitation Psychology and Special Education

- Reviewed all graduate courses, practica, and internships in programs of counseling psychology, school psychology, rehabilitation psychology, and special education for content related to CSHP. Provided an analysis of each course in terms of CSHP topics.
- Reviewed and identified courses in other related departments and schools that address CSHP content: social work, child and family studies, nursing.
- Determined that while considerable instructional effort has been spent on aspects of CSHP, no single coordinated course addressed CSHP in a systematic and interdisciplinary fashion.
- Reviewed local, state, and national models and literature regarding CSHP.
- Planned and received approval for a new interdisciplinary course, "Comprehensive School Health," offered in 1998-99, and planned efforts to institutionalize this course in the preservice curricula of counseling psychology, school psychology, rehabilitation psychology, and special education. Will develop multimedia materials for course.

University of Wisconsin-Madison, School of Education, Department of Curriculum and Instruction
Program Areas: Elementary Education and Health Education

- Continued integration of Wisconsin's framework for CSHP in a course for elementary educators on alcohol and other drug abuse prevention education required for health education minors.
- Used CSHP to more broadly define roles of teachers in preventing drug use and promoting positive youth development through the multiple strategy approach.
- Based on readings, personal experience, and group work, students generated a matrix of strategies for promoting developmental assets and resiliency using the CSHP framework.
- Using CSHP, students identified common strategies across risk behaviors.
- Consulted with faculty and dean to ensure continued use of the framework in this and related Curriculum and Instruction courses related to health and safety.

University of Wisconsin-Madison, School of Education, Department of Curriculum and Instruction
Program Areas: Health Education, Elementary Education, and Secondary Education

- In a course on alcohol and other drug abuse prevention education, CSHP was used as an organizing framework to address HIV/AIDS prevention.
- Students reviewed components of Wisconsin's framework for CSHP and in small groups identified strategies and resources related to HIV/AIDS prevention for each of the framework components.
- Use of framework in this way underscored similarities in strategies used to address HIV/AIDS prevention and alcohol and other drug abuse prevention.
- CSHP was recognized as a comprehensive approach to address many health risk behaviors and support youth development.

University of Wisconsin-Stevens Point, School of Health Promotion and Human Development
Program Area: Family and Consumer Education

- Integrated CSHP into a seminar course for seniors held in conjunction with student teaching. Part of each session was devoted to CSHP concepts such as the four orientations (health, risk prevention, resiliency, and youth development).
- Based on reading guidelines excerpted from the state's framework, students developed a checklist of CSHP characteristics and interviewed a wide variety of school staff regarding roles in promoting student health, safety, and development. Students developed an illustrative piece to demonstrate their understanding of CSHP.
- Integration of CSHP was judged to be a success by students and faculty and will be continued.
- CSHP was introduced in fall 1998 to an entry-level core course. Senior-level class modified in 2000 to facilitate deeper learning about CSHP by students exposed in sophomore year.

University of Wisconsin-La Crosse, Department of Health Education and Health Promotion
Program Areas: School Health Education and Community Health Education

- Incorporated Wisconsin's framework for CSHP in three courses, including Introduction to School Health Programs, an introductory course for school health education majors and minors.

- CSHP provided the structure for this course; many of expected course outcomes were directly related to students' increased understanding of the Wisconsin framework.
- Course addressed each of the components of the framework and culminated in a small-group development of a "Resilient Youth Proposal" to support development of healthy, resilient, and successful learners and discussion of ways in which the plan related to the framework.
- Use of the framework provided a structure from which to address a range of issues and skills, increase awareness of the teacher's role as part of a school team, and increase students' familiarity with CSHP and CSHP language in preparation for work as a new teacher.

University of Wisconsin-Madison, School of Nursing
Program Area: School Nursing

- Developed an additional unit on CSHP as part of a graduate course on school nursing taught via the Internet.

What We're Learning

- A wide variety of preservice programs can successfully incorporate key concepts of CSHP in a year.
- A very wide variety of instructional methods have been used, such as reading, discussion, study groups, peer education, field interviews, use of the Internet, and research projects.
- Integrating CSHP has served as a springboard for interdisciplinary dialogue and exploration of jointly offered, cross-listed courses in postsecondary institutions. Faculty, staff, and students have an interest in multidisciplinary teaching and collaboration.
- Funding availability could provide the impetus for faculty and staff to incorporate CSHP in courses.

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